Nuclear Engineering Enrollments and Degrees Survey, 2021-2022 Data

Number 84 Oak Ridge Institute for Science and Education November 2023

Survey Universe

The 2023 survey includes degrees granted for the academic years September 2020 – August 2021 and September 2021 – August 2022 and enrollments for Fall 2022. Thirty-four nuclear academic programs were surveyed, with all thirty-four responding; thirty programs responded with degree data, and 24 responded with enrollment data. Two schools indicated their programs either had already phased out or were in the process of doing so, namely, University of Cincinnati and University of Maine. The enrollments and degrees data include students majoring in nuclear engineering or in an option program equivalent to a major.

Degree Data

Bachelor's Degrees. The number of bachelor's degrees in 2022 awarded by nuclear engineering programs is about two percent more than in 2021, but lower than levels reported from 2016 – 2019 by nearly 28%. 2021 was the first year that the number of degrees granted fell below the recent trend of over 600 bachelor's degrees awarded annually that began in 2012. The number of bachelor's degrees awarded in 2022 remains significantly below the levels reported in the previous decade and is on par with the number reported in 2010. Nuclear engineering majors accounted for 94% of all bachelor's degrees in 2021 and 91% in 2022 (**Table 1**).

Graduate Degrees. The number of master's degrees awarded by nuclear engineering programs in 2022 increased by 20% from 2021 but is 16% less than the number awarded in 2019. The number of master's degrees awarded in 2021 is the lowest reported since 2006. The number of Ph.D. degrees awarded in 2022 is 20% greater than the number awarded in 2021 and 7% higher than the number awarded in 2019. The number of nuclear engineering Ph.D. degrees awarded in 2022 is the highest reported since 1966, the first year for which survey data was collected. In 2021, nuclear engineering majors comprised 99% of the master's degrees and 100% of the Ph.D. degrees. Nuclear engineering majors accounted for over 99% of the master's degrees and 98% of the Ph.D. degrees in 2022.

Table 1 | Nuclear Engineering Degrees by Curriculum, 2021 and 2022

	2021			2022		
Curriculum	**Bachelor's**	**Master's**	**Ph.D.**	**Bachelor's**	**Master's**	**Ph.D.**
Nuclear Engineering Major	417	220	174	411	266	204
Nuclear Engineering Option	27	3	0	43	1	4
Totals	**444**	**223**	**174**	**454**	**267**	**208**

Source: Oak Ridge Institute for Science and Education.

Table 2 and **Table 3** show degrees granted by institution for 2021 and 2022, respectively.

Table 2 | Nuclear Engineering Degrees, 2021, by Academic Institution

State	Name of Institution	Degrees (Sept. 1, 2020 – Aug. 31, 2021) Bachelor's	Master's	Ph.D.
CA	University of California, Berkeley	13	14	21
CO	Colorado School of Mines	0	1	2
FL	University of Florida	10	4	6
GA	Georgia Institute of Technology	16	9	7
ID	Idaho State University	13	5	2
IL	University of Illinois at Urbana-Champaign	22	7	9
IN	Purdue University	23	6	6
KS	Kansas State University	9	0	2
MA	Massachusetts Institute of Technology	6	4	16
MD	United States Naval Academy	8	0	0
MI	University of Michigan	23	29	24
MO	Missouri University of Science and Technology	22	9	4
NC	North Carolina State University*	11	15	14
NM	University of New Mexico	14	7	1
NV	University of Nevada, Las Vegas	0	4	0
NY	Rensselaer Polytechnic Institute	18	2	3
NY	United States Military Academy at West Point	20	0	0
OH	Air Force Institute of Technology	0	9	2
OH	Ohio State University	0	1	6
OR	Oregon State University	38	10	8
PA	Penn State University	45	14	3
PA	University of Pittsburgh	0	3	0
SC	South Carolina State University	8	0	0
SC	University of South Carolina	0	4	1
TN	University of Tennessee	32	16	16
TX	Texas A&M University	59	33	10
TX	University of Texas at Austin	0	0	0
UT	University of Utah	0	3	2
VA	Virginia Commonwealth University	0	0	0
VA	Virginia Polytechnic Institute and State University	14	3	2
WI	University of Wisconsin-Madison	20	11	7
Totals		**444**	**223**	**174**

Source: Oak Ridge Institute for Science and Education.

* US Department of Education data.

Table 3 | Nuclear Engineering Degrees, 2022, by Academic Institution

State	Name of Institution	Degrees (Sept. 1, 2021 – Aug. 31, 2022) Bachelor's	Master's	Ph.D.
CA	University of California, Berkeley	18	18	25
CO	Colorado School of Mines	0	9	2
FL	University of Florida	11	7	2
GA	Georgia Institute of Technology	15	5	6
ID	Idaho State University	14	6	1
IL	University of Illinois at Urbana-Champaign	32	3	4
IN	Purdue University	23	14	10
KS	Kansas State University	16	3	6
MA	Massachusetts Institute of Technology	5	10	24
MD	United States Naval Academy	17	0	0
MI	University of Michigan	18	18	20
MO	Missouri University of Science and Technology	19	9	1
NC	North Carolina State University*	16	16	11
NM	University of New Mexico	14	16	4
NV	University of Nevada, Las Vegas	0	4	2
NY	Rensselaer Polytechnic Institute	14	1	6
NY	United States Military Academy at West Point	14	0	0
OH	Air Force Institute of Technology	0	10	5
OH	Ohio State University	0	0	5
OR	Oregon State University	16	4	3
PA	Penn State University	26	13	6
PA	University of Pittsburgh	0	3	0
SC	South Carolina State University	5	0	0
SC	University of South Carolina	0	5	1
TN	University of Tennessee	42	34	16
TX	Texas A&M University	71	19	24
TX	University of Texas at Austin	0	7	5
UT	University of Utah	0	7	2
VA	Virginia Commonwealth University	8	17	6
VA	Virginia Polytechnic Institute and State University	25	2	2
WI	University of Wisconsin-Madison	15	7	9
Totals		**454**	**267**	**208**

Source: Oak Ridge Institute for Science and Education.

* US Department of Education data.

Enrollment Trends and Short-Term Outlook for Degree Trends

Undergraduate Students. In 2022, the enrollment of junior and senior nuclear engineering undergraduate students was reported to be approximately 1,470, a decrease of about 16% from the enrollment level reported in 2019, 13% less than reported in 2018, and 24% lower than the level reported for 2016. Undergraduate enrollments reported for 2022 are the lowest since 2014 and appear to be on a new trajectory compared to the strong positive trend exhibited from 2001 to 2013. The number of bachelor's degrees earned over the next year or two should continue to remain close to 450.

Graduate Students. Graduate enrollment in 2022 totaled about 1,590 students, six percent lower than graduate enrollments reported in 2019 and 10% lower than graduate enrollments reported in 2018. Graduate enrollments continue their uneven advance from the low levels experienced twenty years ago and are on par with the numbers reported at the inception of collecting enrollment data in 1971. The continued strength in graduate enrollment indicates that the total number of graduate degrees awarded in the near future is likely to remain near the levels of the prior two years.

Employment or Other Post-Graduation Status

The career plans for graduates provided by respondents are shown in **Table 4**. The unknown/not reported category accounts for 53% of the bachelor's degree graduates, 43% of the master's degree graduates, and 41% of the Ph.D. graduates. Other than the unknown/not reported category, continued study was the most frequently reported post-degree activity for the graduates with bachelor's and master's degrees. For Ph.D. graduates, US Department of Energy (DOE) contractor employment was the largest category.

For bachelor's degree graduates reporting post-graduation employment plans, employment in the US military, active duty, was the largest category, followed by those reporting employment in the nuclear utility sector. The next three largest sectors are DOE contractor employment, other nuclear-related employment, and federal government employment. The number of new bachelor's degree graduates reporting DOE contractor employment remains at the average level of the last two decades. The number reported for the US military, active duty, has remained fairly level over the same time-period.

For master's degree graduates reporting employment plans, DOE contractor employment, nuclear utility employment, other nuclear-related employment, federal government employment, and US military, active duty, accounted for the majority of responses. In recent years, the number of new master's degree graduates reporting plans for active military duty has continued to decrease from the high of 28 in 2015 to 12 in 2022. The share of new master's degree graduates reporting planned employment by nuclear utilities, other nuclear-related employment, and DOE contractors accounted for three of every five master's degree graduates seeking employment in 2022.

For Ph.D. graduates' employment plans, DOE contractor employment, other nuclear-related employment, and federal government employment were the highest reported categories. The number reported for DOE contractor employment is a 19% decrease from the high reported in 2019 yet remains the third highest reported over the last two decades. Other nuclear related employment and nuclear utility employment are both the highest reported since 1996, while the number of 2022 Ph.D. graduates still seeking employment is among the lowest ever reported.

Table 4 | Employment or Other Post-Graduation Status, 2022			
	Bachelor's	**Master's**	**Ph.D.**
Continued Study/Postdoctoral Appointment	91	51	19
Academic Employment	0	5	10
Federal Government Employment	8	14	16
DOE Contractor Employment	14	21	30
State and Local Government Employment	0	< 3	0
Nuclear Utility Employment	35	20	9
Other Nuclear-Related Employment	9	18	20
Other Business Employment	5	3	5
Foreign (non-US) Employment	< 3	4	4
US Military, Active Duty	48	12	8
Other Employment	< 3	< 3	< 3
Still Seeking Employment	< 3	< 3	< 3
Unknown/Not Reported	241	116	85
Totals	**454**	**267**	**208**

Source: Oak Ridge Institute for Science and Education.

Prepared by: Oak Ridge Institute for Science and Education, November 2023.

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